

Abstract

A low noise amplifier is assumed to comprise an MIS transistor and to amplify an input signal keeping noise at a low level, and the MIS transistor comprises a semiconductor substrate for comprising a first crystal plane as a principal plane, a semiconductor structure, formed as a part of the semiconductor substrate, for comprising a pair of sidewall planes defined by the second crystal plane different from the first crystal plane and a top plane defined by the third crystal plane different from the second crystal plane, a gate insulator of uniform thickness covering the principal plane, the sidewall planes and the top plane, a gate electrode for continuously covering the principal plane, the sidewall planes and the top plane on top of the gate insulator, and a single conductivity type diffusion area formed in the region to either side of the gate electrode in the semiconductor substrate and the semiconductor structure and continuously extending along the principal plane, the sidewall planes and the top plane.

Such a configuration allows significant reduction of the $1/f$ noise and the signal distortion applied to an output signal by the low noise amplifier and therefore a circuit for compensating for the reduction of the

amplitude is no longer of necessity, allowing reduction in size.